

FEMALE REPRODUCTIVE SYSTEM  
*Tapeigaster annulipes* Macquart  
 (Fig. 1)

The ovaries, which occupy the greater part of the abdominal cavity in a gravid female, end in short lateral oviducts which meet to form a muscular, median oviduct. There are two spherical, brown-black spermathecae, one on each side; each spermatheca is surrounded by a white fat mass which, in the undisturbed state, is embedded in the tissue surrounding the ovary on the same side. The spermathecal ducts are long, thin, relatively stout-walled and darkly sclerotized at the distal ends; they enter the vagina at the midline. Each of the two accessory glands is an elongate, pale, thin-walled, semi-transparent structure embedded in tissue adjacent to the spermatheca on the same side. The distal end of each accessory gland duct, adjacent to the gland, is somewhat expanded and muscular, presumably with a sphincter function; the accessory gland ducts enter the vagina at the middle immediately posterior to the spermathecal ducts. The vagina, or posterior part of the median oviduct, is slightly expanded, with thick muscular walls in the region of these ducts, and a small dark sclerite lies in the ventral wall. No morula gland or ventral receptacle is present. Strong muscle bands originating from the posterior end of the vagina and inserted in the wall of the vagina just anterior to the spermathecal ducts had to be cut to expand the vagina to its full length.

*Tapeigaster luteipennis* Bezzi  
 (Fig. 2)

Differs from *T. annulipes* as follows. Median oviduct shorter, about three-fifths length of that in *T. annulipes*. Spermathecal ducts pale yellow along most of length, colour slightly darker at proximal ends where they enter the vagina a little lateral to midline on each side. In this region, vagina bulbous with greatly thickened muscular walls and internal yellow, thickened supporting bands associated with openings of the ducts. Accessory glands long, as in *T. annulipes*, but distinctly bulbous distally (Fig. 2). Accessory glands ducts more expanded distally, entering vagina immediately posterior to spermathecal duct on each side.

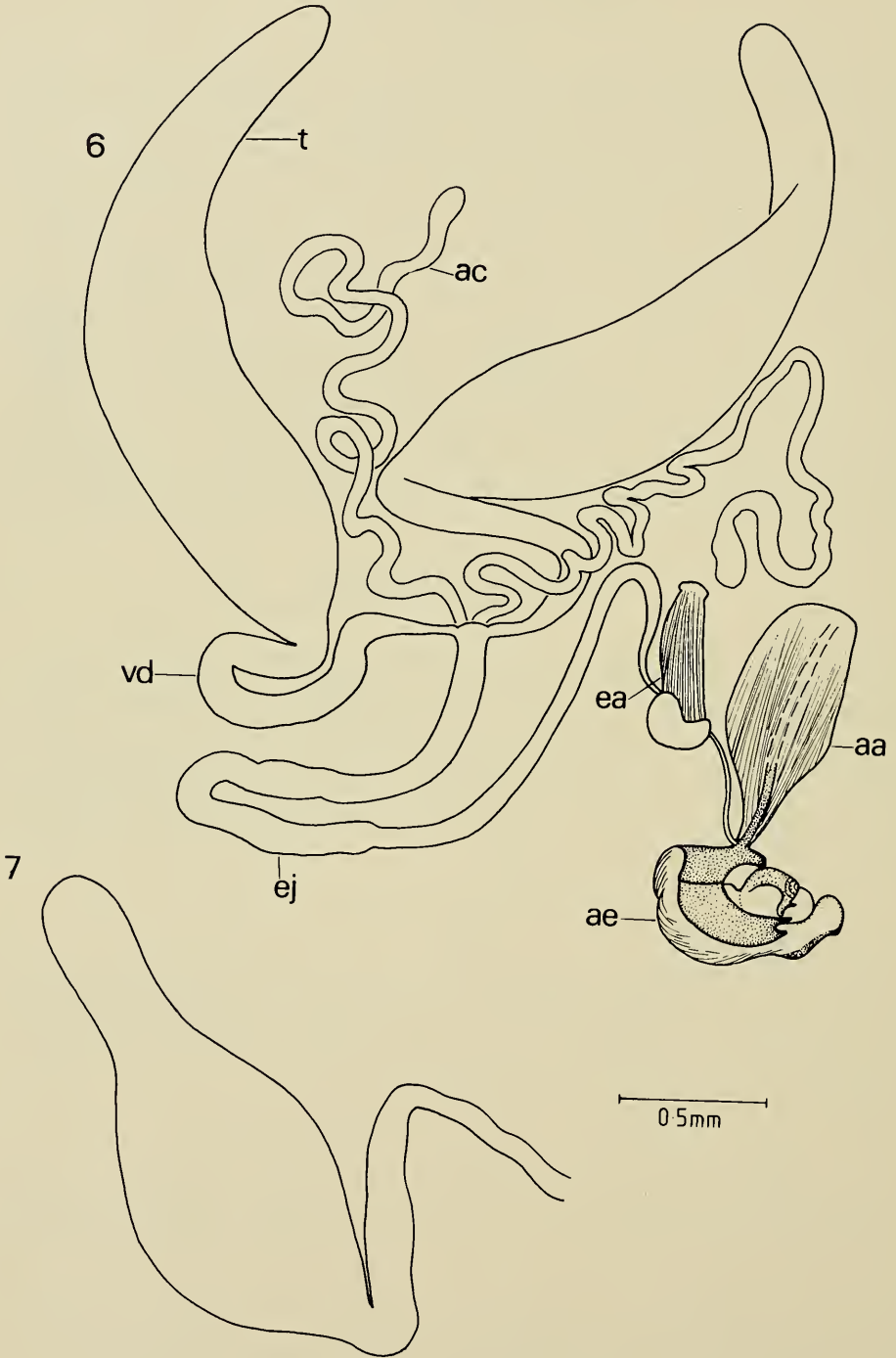
*Tapeigaster annulata* (Hendel)  
 Fig. 3

Differs from *T. annulipes* as follows. Median oviduct short, about half length of that in *T. annulipes*. Accessory glands and muscular distal ends of accessory gland ducts much shorter but otherwise accessory gland ducts a little longer than in *T. annulipes*. Spermathecal and accessory gland ducts meeting vagina lateral to midline as shown in Fig. 3. No sclerite in ventral vaginal wall.

*Tapeigaster pulvereae* McAlpine and Kent  
 (Fig. 4)

Resembles most closely *T. annulata* but differs as follows. Vagina in region of spermathecal duct openings more bulbous with thicker muscular walls. Accessory

Figs 1-5. Female *Tapeigaster* spp.: (1) *T. annulipes*, reproductive system; (2) *T. luteipennis*, accessory gland; (3) *T. annulata*, reproductive system, ovaries not shown; (4, 5,) proximal ends of spermathecal and accessory gland ducts: (4) *T. pulvereae*; (5) *T. digitata*. ac = accessory gland, acd = accessory gland duct, c = cercus, ft = fat mass, lo = lateral oviduct, m = cut muscle band, mo = median oviduct, ov = ovary, sp = spermatheca, spd = spermathecal duct, T9 — tergite 9, v — vagina.



glands and ducts smaller and shorter than in *T. annulata*, entering vagina distinctly lateral to spermathecal ducts (Fig. 4).

*Tapeigaster subglabra* McAlpine and Kent

Only specimen of this species available for dissection proved to be very immature with ovaries not developed and accessory glands small and very thin-walled. Sclerite in ventral wall of vagina not present. Sclerotization of distal ends of spermathecal ducts absent, these ducts meeting vagina as in *T. annulipes* but accessory gland duct appearing to meet vagina lateral to midline.

*Tapeigaster digitata* McAlpine and Kent

(Fig. 5)

Although generally agreeing with description given for *T. annulipes*, differs as follows. Spermathecae mid-brown and spermathecal ducts meeting vagina lateral to midline (Fig. 5). Accessory glands about three-fourths length of those of *T. annulipes*, pale yellowish rather than white and not as thin-walled.

MALE REPRODUCTIVE SYSTEM

*Tapeigaster annulata*

(Fig. 6)

The testes are golden brown, apically tapered, elongate sacs. The stout, golden-brown vasa deferentia narrow proximally where they enter the apex of the pale-coloured ejaculatory duct. This duct is at first relatively stout and thick-walled but abruptly narrows about half way along its length. Posteriorly it passes into the ejaculatory bulb which has articulated with it, the muscle-covered ejaculatory apodeme. A narrow, strong duct connects this with the aedeagus to which is articulated the large, flat, muscle-covered aedeagal apodeme. The accessory glands which enter the apex of the ejaculatory duct ventral to the vasa deferentia are long, pale yellow and only slightly expanded apically.

*Tapeigaster annulipes*

(Fig. 7)

Generally similar to *T. annulata* but differs as follows. Testes (Fig. 7) shorter and more expanded basally. Vasa deferentia a little longer. Accessory glands about half as long as those of *T. annulata* and almost as thick as distal portion of ejaculatory duct, which is wider and longer than in *T. annulata*.

*Tapeigaster luteipennis*

Specimens of this species available for dissection were immature so it is difficult to make accurate comparisons with other species. Testes small but of similar shape to those of *T. annulipes* except not so markedly expanded basally and more rounded apically. Ejaculatory duct wide distally as in *T. annulipes* but accessory glands in specimens examined long and narrow, about half width of ejaculatory duct, as in *T. annulata*.

Fig. 6-7. Male *Tapeigaster* spp.: (6) *T. annulata*, reproductive system; (7) *T. annulipes*, testis and vas deferens. aa = muscle-covered aedeagal apodeme, ac = accessory gland, ae = aedeagus, ea = muscle covered ejaculatory apodeme, ej = ejaculatory duct, t = testis, vd = vas deferens.

*Tapeigaster pulverea*

Appears most similar to *T. annulata* although once again available specimens seemed immature judging from small size of testes, especially in one specimen in which there was also very little pigmentation of testes and vasa deferentia. Testes relatively long and narrow but not as apically tapered as in *T. annulata*. Accessory glands narrow but about half length of those in *T. annulata*.

*Tapeigaster subglabra*

(Fig. 8)

General appearance of male reproductive system of this species quite different from that of any other species dissected as shown in Fig. 8. Testes golden-brown with

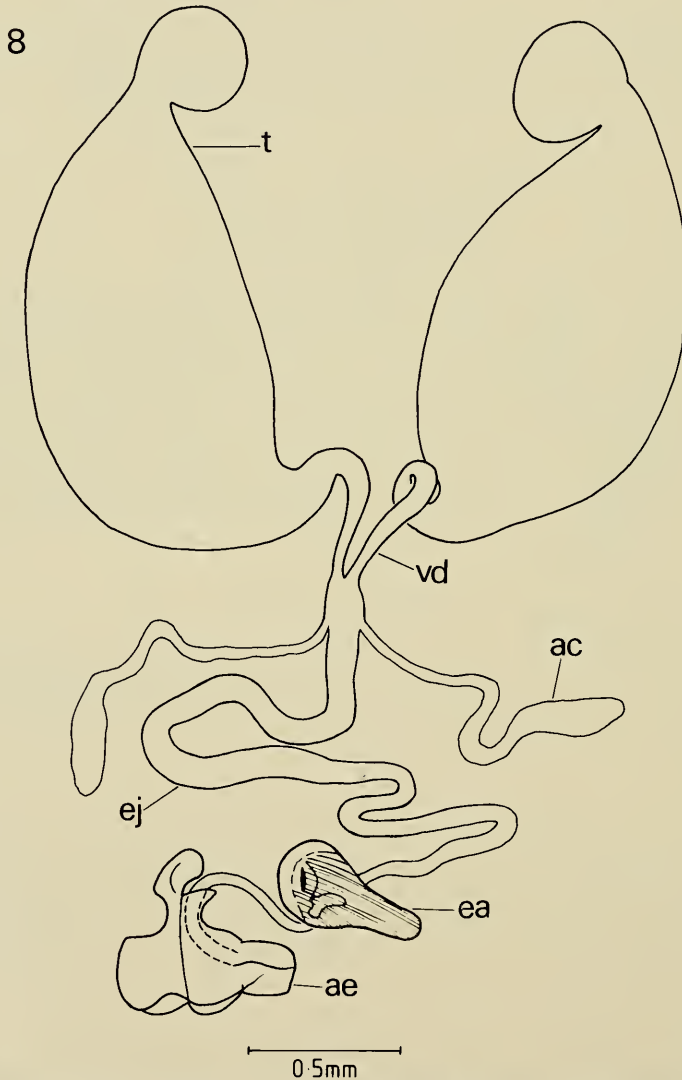


Fig. 8. *Tapeigaster subglabra*, male reproductive system. ac = accessory gland, ae = aedeagus, ea = muscle covered ejaculatory apodeme, ej = ejaculatory duct, t = testis, vd = vas deferens.

rounded lobe distally. Pale brown vasa deferentia short, entering median ejaculatory duct at its slightly expanded apex. Accessory glands much shorter than those of *T. annulata*, distinctly expanded at distal ends and entering distal end of ejaculatory duct posterolateral to vasa deferentia. Aedeagal apodeme present although not shown in Fig. 8.

#### DISCUSSION

All female specimens dissected had two spherical, dark spermathecae and males had large, golden-brown testes. These could perhaps be regarded as generic characters but further comparative studies need to be made to confirm this. The dissection also showed that even in the females there are specific differences in the morphology of the reproductive systems but it would be difficult to make accurate interpretations concerning closeness of relationships between species from the differences observed. However, in conjunction with the information gained from the dissections of males it would seem that *T. pulverea* and *T. annulata* are quite closely related. *T. luteipennis* is perhaps closest of *T. annulipes* but with some similarities to *T. annulata*. *T. subglabra* is not very close to any of the other species dissected.

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#### References

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